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ABSTRACT

This profile is designed as a recording sheet for monitoring an individual student's progress throughout the school year. Eighth grade assessment materials and the "Strategies for Instruction in Mathematics" suggests tasks and questions that can be used for on-going and summative assessment. Directions for use and descriptions of levels of performance are presented. (ASK)

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Mathematics

Eighth Grade Observation Profile for On-Going Assessment and End of the Year Evaluation

This profile is designed as a recording sheet for monitoring an individual student's progress throughout the school year. The *Strategies for Instruction in Mathematics* suggests tasks and questions that can be used for on-going and summative assessment.

Directions for use:

The four main mathematical goals and the specific objectives from the North Carolina *Standard Course of Study* are clustered on this profile according to "big ideas." There are six boxes for recording a student's performance level (1, 2, 3, or 4) at each grading period as some school systems have six grading periods, while others have four grading periods. Teachers will use only the boxes needed. The hexagon beside each "big idea" is for the teacher's summative evaluation and will be filled in at the end of the year.

It is suggested that teachers record an evaluation (performance level) for each objective that is taught during a particular grading period; it is not necessary to record an evaluation for objectives that have not been addressed. Student work, conversations with the student, and observations provide evidence for the evaluation of performance. Evaluations are based on the student's abilities to explain, model, and apply learning. Student work folders (or portfolios) will support the evaluation.

Public Schools of North Carolina
State Board of Education
Department of Public Instruction

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Student Name _____ ID # _____ Teacher's Name _____ School _____ Year _____

Eighth Grade Observation Profile for On-Going Assessment and End of the Year Evaluation

Number Sense, Numeration, and Numerical Operations - Spatial Sense, Measurement, and Geometry - Patterns, Relationships, and Functions - Data, Probability, and Statistics

Descriptions of levels of Performance

Level IV (Exceeds expectations)
- consistent performance beyond grade level
- works independently
- understands advanced concepts
- applies strategies creatively
- analyzes and synthesizes
- shows confidence and initiative
- justifies and elaborates responses
- makes critical judgements
- makes applications and extensions beyond grade level; applies Level III competencies in more challenging situations

Level III (Proficient)
- **exhibits consistent performance**
- **shows conceptual understanding**
- **applies strategies in most situations**
- **responds with appropriate answer or procedure**
- **completes tasks accurately**
- **needs minimal assistance**
- **exhibits fluency and applies learning**
- **shows some flexibility in thinking**
- **works with confidence**
- **recognizes cause and effect relationships**
- **applies, models, and explains concepts**

Level II (Not yet proficient)
- exhibits inconsistent performance and misunderstandings at times
- shows some evidence of conceptual understanding
- has difficulty applying strategies or completing tasks in unfamiliar situations
- responds with appropriate answer or procedure sometimes
- requires teacher guidance frequently
- needs additional time, opportunities
- demonstrates some Level III competencies but is inconsistent

Level I (Limited performance)
- exhibits minimal performance
- shows very limited evidence of conceptual understanding and use of strategies
- responds with inappropriate answer and/or procedure frequently
- very often displays misunderstandings
- completes task appropriately and accurately infrequently
- needs assistance, guidance and modified instruction

Using the real numbers

1.01 Identify subsets of the real number system.

1.02 Estimate and compute with rational numbers.

1.03 Compare, order, and convert among fractions, decimals (terminating and non-terminating), and percents.

1.05 Use scientific notation to express large numbers and numbers less than one. Write in standard form numbers given in scientific notation.

1.06 Use rules of exponents.

1.07 Estimate the square root of a number between two consecutive integers; using a calculator, find the square root of a number to the nearest tenth.

1.09 Determine the absolute value of a number.

Solving problems

1.04 Solve problems involving percent of increase and percent of decrease.

1.08 Solve problems involving exponents and scientific notation.

1.12 Analyze problems to determine if there is sufficient or extraneous data, select appropriate strategies, and use an organized approach to solve using calculators when appropriate.

2.01 Use geometric concepts and modeling to interpret and solve problems.

2.06 Use the Pythagorean Theorem to solve problems.

2.12 Select appropriate units and tools for measurement tasks within problem-solving situations; determine precision and check for reasonableness of results.

2.08 Solve problems related to similar and congruent figures.

3.01 Use formulas in problem-solving situations.

Using geometric concepts

2.02 Calculate distances and areas from scale drawings and maps.

2.03 Find the surface area of rectangular solids and cylinders.

2.04 Use models to investigate the relationship of the volume of a cone to a cylinder and a pyramid to a prism with the same base and height.

2.05 Find the volume of prisms, cylinders, pyramids, and cones, with and without models.

2.07 Determine the effect on the volume of solid figures when one or more dimension is changed.

2.09 Locate, give the coordinates of, and graph plane figures which are the results of rotations (multiples of 90°). Graph plane figures which are similar to a given figure (dilations).

2.10 Identify and draw 3-dimensional figures from different perspectives (top, side, front, corner); use appropriate technology.

2.11 Build 3-dimensional figures given various views.

Applying algebraic concepts

1.10 Identify, explain, and apply the commutative, associative, and distributive properties, inverses, and identities in algebraic expressions.

1.11 Simplify algebraic expressions.

3.02 Solve one and two-step linear equations and inequalities.

3.03 Graph a linear equation using ordered pairs. Investigate the graphs of linear inequalities; use appropriate technology.

3.04 Investigate the concept of slope; use appropriate technology

3.05 Describe, extend, and analyze a wide variety of geometric and numerical patterns, such as Pascal's triangle or the Fibonacci sequence; use appropriate technology.

Using statistics/probability

4.01 Interpret and construct box plots.

4.02 Collect data involving two variables and display on a scatter plot; interpret results; identify positive and negative relationships.

4.03 Interpret the mean, explain its sensitivity to extremes, and explain its use in comparison with the median and the mode.

4.04 Evaluate arguments based on data. Discuss random vs. biased sampling.

4.05 Find the probability of independent and dependent events.

4.06 Make predictions based on theoretical probabilities and experimental results.

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